

REMARKS

Claims 5-7 remain pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 5-7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sugahara (U.S. Pat. No. 6,286,923 B1). This rejection is respectfully traversed.

Claim 5 calls for a liquid drop ejecting device comprising a liquid drop ejecting head device and a controlling device. The liquid drop ejecting device has: a liquid drop ejecting head ejecting a liquid drop; a detachable storage section arranged in the liquid drop ejecting head device, being detachable from the liquid drop ejecting head device, and storing at least one of record data indicating whether or not the liquid drop is ejected from the liquid drop ejecting head device; and a storage controlling section arranged in the liquid drop ejecting head device, reading out at least one of the record data from the detachable storage section and/or writing at least one of the record data to the detachable storage section. The controlling device is arranged separate from the liquid drop ejecting head device, but is coupled to the liquid drop ejecting head device, and transmits, to the liquid drop ejecting head device, the record data and a driving waveform driving the liquid drop ejecting head.

According to the invention as recited in claim 5, it is possible to eject a liquid drop according to a variety of record data only by exchanging the detachable storage section. It is not necessary to transmit the record data from the controlling device to the liquid

drop ejecting head device before the liquid drop is ejected by preparing a plurality of storage sections having different record data in advance so as to exchange the storage section according to the manufacturing step. Furthermore, it is possible to employ a method in which a plurality of liquid drop ejecting head devices having a storage section, in which a variety of different record data is stored, are prepared in advance so as to exchange the liquid drop ejecting head device according to the manufacturing step. By employing such a method, it is not necessary to transmit the record data from the controlling device to the liquid drop ejecting head device in the controlling device before the liquid drop is ejected. Thus, it is possible to improve the manufacturing efficiency.

This Office Action states that Sugahara discloses the feature of previously amended claim 5. Concretely, the Office Action states that an ink jetting mechanism 130 of Sugahara corresponds to a liquid drop ejecting head device of the present invention, a non-volatile memory 10 of Sugahara corresponds to a detachable storage section of the present invention, a print head 1 of Sugahara corresponds to a liquid drop ejecting head of the present invention, a control circuit 40 of Sugahara corresponds to a storage controlling section of the present invention, a head holder 3 and the non-volatile memory unit 10 of Sugahara corresponds to the detachable storage section of the present invention, and a drive circuit 44 of Sugahara corresponds to a controlling device of the present invention.

However, Applicant respectfully submits that despite the foregoing allegations, Sugahara does not disclose the features of amended claim 5. That is, as shown in FIG. 6, Sugahara discloses that a print head 1 and a printed wiring board 9 including the

non-volatile memory unit 10 are formed on a head holder 3. The head holder 3 is detachably mounted on the ink jetting mechanism 130. When the head holder 3 is removed from the ink jetting mechanism 130, the printed wiring board 9 and the print head 1 are also removed from the ink jetting mechanism 130 together. In Sugahara, it is impossible to separate the non-volatile memory unit 10 from the printed wiring board 9 or from the head holder 3.

In contrast, in claim 5 of the present invention, the detachable storage section is arranged in the liquid drop ejecting head device, is detachable from the liquid drop ejecting head device, and stores at least one of record data indicating whether or not the liquid drop is ejected from the liquid drop ejecting head device. From viewpoint of detachability or fixedness, the detachable storage section of claim 5 of the present invention is different from the non-volatile memory unit 10 of Sugahara.

Furthermore, in Sugahara, the control circuit 40 is formed on a circuitry board 140, and not formed on the head holder 3 or on the printed wiring board 9. In contrast, in claim 5 of the present invention, the storage controlling section is arranged in the liquid drop ejecting head device, reads out at least one of the record data from the detachable storage section and/or writes at least one of the record data to the detachable storage section.

According to the difference between a position at which the storage controlling section is arranged and a position at which the control circuit 40 is arranged, the storage controlling section of claim 5 of the present invention is different from the control circuit 40 of Sugahara.

Furthermore, in Sugahara, the drive circuit 44 is formed on the printed wiring board 9. The head holder 3 includes the drive circuit 44. In contrast, in claim 5 of the present invention, the controlling device is arranged separate from the liquid drop ejecting head device, is coupled to the liquid drop ejecting head device, and transmits, to the liquid drop ejecting head device, the record data and a driving waveform driving the liquid drop ejecting head.

According to the difference between a position at which the controlling device is arranged and a position at which the drive circuit 44 is arranged, the controlling device of claim 5 of the present invention is different from the drive circuit 44 of Sugahara.

As described above, the features of claim 5 of the present invention are different from Sugahara.

In addition, Sugahara discloses that "With this configuration, the memory is replaced along with the print head, so that calculation of the number of drive times is started afresh with respect to the newly replaced print head. Also, because the number of drive times is counted on the printer body side and the counted number is stored in the memory on the print head, counting operations are easy to control and there is no need to frequently store the numbers in the memory." Column 2, lines 39-47.

As described above, in Sugahara, the memory is used for storing the counted number of drive times. In contrast, in the present invention, the detachable storage section is used for storing at least one of record data indicating whether or not the liquid drop is ejected from the liquid drop ejecting head device.

Thus, Sugahara is different from the present invention from the viewpoint of the object of storage.

Accordingly, in Sugahara, it is not possible to obtain the above described effects of the present invention.

Sugahara does not disclose the features of claim 5 of the present invention. In addition, none of the references disclose, teach, or suggest the present invention as set forth in claim 5.

Dependent claims 6 and 7 are patentable for at least the same reasons as their base claim.

In conclusion, claims 5-7 of the present application are not anticipated nor rendered obvious by the above-described cited document.

In view of the above, Applicant believes the pending application is in condition for allowance.

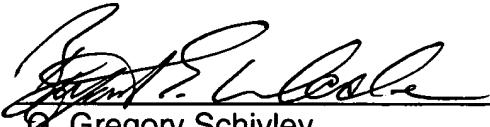
CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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